

$$\Delta a/a = (a_d - a_e)/a_e$$

where a_d is a lattice constant of the current diffusion layer, and a_e is a lattice constant of the light-emitting structure.

2. {UNAMENDED} A light-emitting diode according to claim 1, wherein crystal of the semiconductor substrate is inclined by 8° (8 degrees) to 20° (20 degrees) in a [110] direction with respect to a (100) plane thereof.

3. {UNAMENDED} A light-emitting diode according to claim 1, wherein a composition of the current diffusion layer is selected in such a manner that the current diffusion layer becomes transparent with respect to a wavelength of light emitted from the light-emitting structure.

4. {UNAMENDED} A light-emitting diode according to claim 1, wherein a composition of the current diffusion layer is expressed as $(Al_xGa_{1-x})_yIn_{1-y}P$, and x is set in the range of 0.01 to 0.05 and $1-y$ is set in the range of 0.01 to 0.30 in the composition.

5. {UNAMENDED} A light-emitting diode according to claim 1, wherein a composition of the current diffusion layer is expressed as $(Al_xGa_{1-x})_yIn_{1-y}P$, and at least one of a value of x and a value of $1-y$ in the composition varies along a thickness direction of the layered structure.

6. {UNAMENDED} A light-emitting diode according to claim 1, wherein a composition of the current diffusion layer is expressed as $(Al_xGa_{1-x})_yIn_{1-y}P$, and at least one of a value of x and a value of $1-y$ in the composition decreases in a step-like manner along a thickness direction of the layered structure from an interface with the light-emitting structure toward opposite end of the current diffusion layer.

7. {UNAMENDED} A light-emitting diode according to claim 1, wherein a composition of the current diffusion layer is expressed as $(Al_xGa_{1-x})_yIn_{1-y}P$, and at least one of a value of x and a value of $1-y$ in the composition varies in a step-like manner along a thickness direction of the layered structure from an interface with the light-emitting structure toward opposite end of the current diffusion layer, thereby controlling a resistivity of the current diffusion layer in the thickness direction.

8. {UNAMENDED} A light-emitting diode according to claim 5, wherein both the values of x and $1-y$ in the composition of the current diffusion layer vary, independent of each other.

9. {UNAMENDED} A light-emitting diode according to claim 6, wherein both the values of x and $1-y$ in the composition of the current diffusion layer decrease, independent of each other.

10. {UNAMENDED} A light-emitting diode according to claim 7, wherein both the values of x and $1-y$ in the composition of the current diffusion layer vary, independent of each other.

11. {UNAMENDED} A light-emitting diode, comprising:
a semiconductor substrate; and
a layered structure comprising an AlGaInP type compound semiconductor material provided on the semiconductor substrate, the layered structure comprising:
a light-emitting structure comprising of a pair of cladding layers and an active layer for emitting light provided between the pair of cladding layers; and
a current diffusion layer comprising an AlGaInP type compound semiconductor material, the current diffusion layer being lattice-mismatched with the light-emitting structure.

12. {UNAMENDED} The light-emitting diode as in claim 11, wherein a lattice mismatch $\Delta a/a$ of the current diffusion layer with respect to the light-emitting structure is defined by

$$\Delta a/a = (a_d - a_e)/a_e$$

where a_d is a lattice constant of the current diffusion layer, and a_e is a lattice constant of the light-emitting structure.

13. {UNAMENDED} The light-emitting device as in claim 12, wherein the lattice mismatch is -1% or smaller.

14. {ONCE AMENDED} A light-emitting diode, comprising:
a semiconductor substrate; and
a layered structure comprising an AlGaInP type compound semiconductor material provided on the semiconductor substrate, the layered structure comprising:
a light-emitting structure comprising a pair of cladding layers and an active layer for emitting light provided between the pair of cladding layers;
a current diffusion layer comprising an AlGaInP type material which is lattice-mismatched with the light-emitting structure and the semiconductor substrate; and
wherein
the semiconductor substrate is inclined in a [011] direction with respect to a (100) plane thereof.

PLEASE ADD NEW CLAIMS 15 - 16 AS FOLLOWS:

-- 15. {NEW} A light-emitting diode, comprising:
a semiconductor substrate; and
a layered structure comprising an AlGaInP type compound semiconductor material provided on the semiconductor substrate, the layered structure comprising:

a light-emitting structure comprising of a pair of cladding layers and an active layer for emitting light provided between the pair of cladding layers; and
a current diffusion layer comprising an AlGaInP type compound semiconductor material, the current diffusion layer being lattice-mismatched with the light-emitting structure to obtain a prescribed level of resistivity of the current diffusion layer.

16. {NEW} A light-emitting diode according to claim 15, wherein the lattice mismatch $\Delta a/a$ of the current diffusion layer with respect to the light-emitting structure defined by the following expression is -1% or smaller:

$$\Delta a/a = (a_d - a_e)/a_e$$

where a_d is a lattice constant of the current diffusion layer, and a_e is a lattice constant of the light-emitting structure.

REMARKS

Favorable reconsideration of the above-referenced application is respectfully requested.

A. SUMMARY OF THIS AMENDMENT

By the current amendment, Applicant:

1. Amends claim 1 to moot the formalities rejections under 35 USC 112, second paragraph.
2. Adds new claim 15 (which resembles claim 11 with a last clause taken essentially from the paragraph bridging pages 19 and 20 of the specification), and new dependent claim 16 (having limitations taken from the end of original independent claim 1)